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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,891	09/24/2003	Paul Kenneth Houpt	130504-1	5966

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EXAMINER

ARTHUR JEANGLAUD, GERTRUDE

ART UNIT PAPER NUMBER

3661

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/670,891	HOUP ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Gertrude Arthur-Jeanglaude	3661	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-14 and 23-28 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 5-8 and 19-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/24/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

#### ***Claim Objections***

Claims 1, 9 are objected to because of the following informalities: the recitation of the word "adapted for" is not a positive recitation and therefore the content of the claim is not limited to any environment. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 15, are rejected as best understood under 35 U.S.C. 102(b) as being anticipated by Franke et al. (WO 01/08956).

As to claim 1, Franke et al. disclose an apparatus for controlling a railway consist, the apparatus comprising a consist model adapted for computing an objective function from a set of model parameters; a parameter identifier adapted for calculating the model parameters from a set of consist measurements; and a trajectory optimizer (optimizing algorithm) adapted for generating the candidate driving plans (route between a point of departure and a point of arrival) and for selecting an optimal driving plan to optimize the objective function subject to a set of terminal constraints and operating constraints (See abstract).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franke et al. (WO 01/08956) in view of Hawthorne et al. (WO 01/20587).

As to claims 2, 16, Franke discloses all but fail to specifically disclose a pacing control system in the translated abstract. In an analogous art, Hawthorne et al. discloses an analysis system (controlling) adapted for generating a set of throttle commands (considered as categories of pneumatic braking, dynamic braking and track topology) (See abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Franke et al. with of Hawthorne et al. by having a control system for generating a set of throttle in order to analyze train handling.

Claims 3-4, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franke et al. (WO 01/08956) in view of Phuyal (U.S. Patent No. 6,502,033).

As to claims 3-4, 17-18, Franke et al. disclose but does not specifically discloses display and Kalman Filter in the translated abstract. In an analogous art, Phuyal discloses a display module for displaying route (driving plan) and an extended Kalman filter (See col. 6, lines 35-54; col. 8, lines 3-19). It would have been obvious to one of

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ordinary skill in the art at the time of the invention to modify the system of Franke et al. with that of Phuyal by having a display and using Kalman filter in order to determine vehicle position.

***Allowable Subject Matter***

Claims 5-8, 19-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to disclose the extended kalman filter has an extended filter state vector comprising a consist position estimate, a consist speed estimate, and the model parameters; and the consist measurements comprise a consist position measurement and a consist speed measurement.; nor does the prior art disclose the objective function is a quantity or linear combination of quantities selected from the group consisting of fuel consumption, travel time, integral squared input rate, and summed squared input difference.

Claims 9-14, 23-28 are allowed.

The prior art fails to disclose in combination an apparatus for controlling a railway consist comprising the objective function is a quantity or linear combination of quantities selected from the group consisting of fuel consumption, travel time, integral squared input rate, and summed squared input difference.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gertrude Arthur-Jeanglaude whose telephone number is (571) 272-6954. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GAJ

*GAJ*

March 1, 2006

*Gertrude A. Jeanglaude*  
GERTRUDE A. JEANGLAUDE  
PRIMARY EXAMINER